

REMARKS

Applicant appreciates the courtesy extended by the Examiner Nguyen and the Primary Examiner Van during the telephonic interview conducted on February 23, 2010.

This following remarks reflect the substance of the interview.

Claims 1-12 are currently pending. No claim amendments are made in this Reply.

Applicant respectfully requests reconsideration and withdrawal of the following 35 U.S.C. § 103(a) rejections:

- The rejection of claims 1-3 and 6 based on JP 09-155583 to Oota et al. ("Oota") in view of DE 19909390 to Nowotny et al. ("Nowotny");
- The rejection of claim 4 based on Oota and Nowotny in view of U.S. Patent No. 6,838,638 to Satou et al.;
- The rejection of claim 5 based on Oota and Nowotny in view of JP 2891378 to Mihashi;
- The rejection of claim 7 based on Oota and Nowotny in view of U.S. Patent No. 6,717,106 to Nagano et al.;
- The rejection of claim 8 based on Oota and Nowotny in view of U.S. Patent Publication No. 2002/0003132 to Scalzotto;
- The rejection of claims 9 and 10 were rejected based on Oota and Nowotny in view of U.S. Patent No. 5,571,430 to Kawasaki et al.;
- The rejection of claim 11 based on Oota and Nowotny in view of U.S. Patent No. 5,837,960 to Lewis et al.; and

- The rejection of claim 12 based on Oota and Nowotny in view of JP 405311385 to Yomo et al.

Claim 1 recites, among other things, “a rotator rotating [a] laser-processing head around [a] central axial line of [a] valve seat portion such that the laser-processing head is inclined with respect to [a] generally vertical line.” Claim 6 recites, among other things, “holding a laser-processing head in an inclined orientation with respect to [a] vertical direction and rotating the laser-processing head around [a] central axial line of [a] valve seat portion.”

The Office Action relied on Drawing 8 of Oota as purportedly teaching “a rotator rotating [a] laser-processing head around the central axial line of the valve seat portion such that said laser-processing head is inclined with respect to [a] generally vertical line,” as recited in claim 1. Office Action, page 3. The Office Action further proposed combining elements of a conventional apparatus described in Oota (represented in Drawing 8) with elements of an embodiment of Oota (Drawing 1), and then proposed combining those elements with asserted features of Nowotny, to purportedly teach the claimed laser-clad processing apparatus recited in claim 1. Office Action, pages 2-3. As explained during the interview, Applicant submits that the proposed combination would be improper for the following reasons.

If a proposed modification or combination of the prior art would change the principle of operation of the prior art device being modified, then the teachings of the references are insufficient to establish *prima facie* case of obviousness. M.P.E.P. § 2143.01.VI (citing *In re Ratti*, 270 F.2d 810 (CCPA 1959)). Further, a prior art

reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. M.P.E.P. § 2141.02.VI.

In the representative embodiment of Oota (Drawing 1), a cylinder head 34 is mounted on a theta shaft table 28 and is rotated by a theta shaft drive motor 42 (paragraphs [0022]-[0023]). Further, Oota emphasizes the importance of maintaining a laser beam in a fixed position while rotating a cylinder head, in order to perform laser-clad processing uniformly and precisely (paragraphs [0015], [0034]-[0036]). In view of the above disclosures, one of ordinary skill in the art would not have considered combining features of Oota's embodiment (Drawing 1) with the rotating mirrors 106a and 106b of the prior art apparatus described in Oota (Drawing 8), because such a hypothetical modification would change the principle of operation such that a laser beam would no longer be fixed. Furthermore, the movement of the laser beam with respect to the cylinder head would be contrary to Oota's teaching of having a fixed laser beam to provide uniform and precise laser-clad processing.

Moreover, regarding the prior art apparatus shown in Drawing 8, Oota discloses that when moving a laser beam, "uniform processing could not be performed over [a] valve-seat perimeter" (paragraph [0004]). Oota further notes that moving a laser beam is an unrealistic solution, teaching that rotating a laser oscillation machine would require a substantial enlargement of the facility (paragraph [0004]). In considering Oota in its entirety, therefore, **Oota teaches away** from the prior art apparatus shown in Drawing 8. Accordingly, one of ordinary skill in the art would not have had any reason to modify Oota to remove a theta shaft drive motor 42 and a theta shaft table 28, as

shown in Drawing 1, and to substitute in their place a rotator that rotates a laser-processing head according to the prior art shown in Drawing 8.

Nowotny also neither discloses nor suggests at least the above-mentioned features of claims 1 and 6. The combination of Oota and Nowotny therefore does not overcome the deficiencies of Oota.

In addition, claim 1 recites, among other things, "a coaxial nozzle . . . configured to direct [a] powdery material in a direction substantially parallel to [a] central axial line in an equal amount across [a] process part of [a] valve seat portion". As acknowledged during the interview, the hypothetical combination of Oota and Nowotny, including the specific portions cited in the Office Action, neither discloses nor suggests at least the above features of the claimed nozzle.

For at least these reasons, independent claims 1 and 6 are allowable over Oota and Nowotny. Claims 2 and 3 depend from claim 1, and incorporate all of the features of claim 1. Claims 2 and 3 therefore are allowable for reasons at least the same as those set forth for claim 1.

Claims 4 and 5 depend from claim 1 and incorporate all of the features of claim 1. Claims 7-12 depend from claim 6 and incorporate all of the features of claim 6. The above-mentioned features of claims 1 and 6, missing from Oota or Nowotny, are also neither disclosed nor suggested in the other cited references. Accordingly, claims 4, 5 and 7-12 are allowable over the cited § 103(a) references for reasons at least the same as those set forth for claims 1 and 6, respectively.

In light of the foregoing amendments and remarks, Applicant respectfully requests reconsideration of this application, withdrawal of all of the pending rejections, and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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